IN THE CLAIMS

1. (Currently Amended) A method for generating a curve on a surface, comprising:

selecting a parameterization of the surface, wherein the parameterization corresponds to a parameter space;

selecting a first curve in the parameter space, wherein the first curve is a Low Discrepancy Curve in the parameter space;

determining a re-parameterization of the surface based on a metric of the surface; and

mapping the first curve in the parameter space onto the surface based on the re-parameterization, to generate the curve, wherein the generated curve is a Low Discrepancy Curve on the surface;

wherein the curve is useable in analyzing the surface.

2. (Original) The method of claim 1, further comprising:
generating output comprising the generated curve on the surface.

3. (Cancelled)

4. (Original) The method of claim 1, wherein the parameter space comprises a 2D rectangle.

5. (Original) The method of claim 1, wherein the parameter space comprises one of a unit square, a unit cube, or a unit hyper-cube.

6. (Original) The method of claim 1, wherein the parameter space comprises a unit n-dimensional cube, wherein the dimensionality n is greater than 4.

7. (Original) The method of claim 1, wherein the metric of the surface is a Riemannian metric.

8. (Original) The method of claim 1, wherein the surface comprises a space with dimensionality greater than two.

9. (Original) The method of claim 1,

wherein the surface comprises a six-dimensional space comprising three position degrees of freedom and three orientation degrees of freedom for an object; and

wherein the generated curve comprises a scan path useable in scanning the space.

10. (Original) The method of claim 9, further comprising:

scanning the space, wherein said scanning the space is performed to determine an optimum position and orientation for the object.

11. (Currently Amended) A method for generating a curve on a surface of an object, comprising:

selecting a parameterization of the surface, wherein the parameterization corresponds to a parameter space;

selecting a first curve in the parameter space, wherein the first curve is a Low Discrepancy Curve in the parameter space;

determining a re-parameterization of the surface based on a metric of the surface; and

mapping the first curve in the parameter space onto the surface based on the re-parameterization, to generate the curve, wherein the generated curve is a Low Discrepancy Curve on the surface;

wherein the curve is useable in analyzing the object.

12. (Original) The method of claim 11, further comprising:

generating output comprising the generated curve on the surface.

13. (Original) The method of claim 11, further comprising:

analyzing the object using the curve.

14. (Original) The method of claim 11, further comprising:

determining a property of the object using the curve.

15. (Cancelled)

16. (Original) The method of claim 1, wherein the parameter space comprises a 2D rectangle.

17. (Original) The method of claim 1, wherein the parameter space comprises one of a unit square, a unit cube, or a unit hyper-cube.

18. (Original) The method of claim 1, wherein the parameter space comprises a unit n-dimensional cube, wherein the dimensionality n is greater than 4.

19. (Original) The method of claim 1, wherein the metric of the surface is a Riemannian metric.

20. (Original) The method of claim 1, wherein the surface comprises a space with dimensionality greater than two.

21. (Currently Amended) A memory medium which is operable to store program instructions for generating a curve on a surface, wherein said program instructions are executable to perform:

storing a parameterization of the surface, wherein the parameterization corresponds to a parameter space;

storing a first curve in the parameter space, wherein the first curve is a Low Discrepancy Curve in the parameter space;

determining a re-parameterization of the surface based on a metric of the surface; and

mapping the first curve in the parameter space onto the surface based on the re-parameterization, to generate the curve, wherein the generated curve is a Low Discrepancy Curve on the surface;

wherein the curve is useable in analyzing the surface.

22. (Original) The memory medium of claim 21, wherein the program instructions are further executable to perform:

generating output comprising the generated curve on the surface.

23. (Cancelled)

24. (Original) The memory medium of claim 21, wherein the parameter space comprises one of a 2D rectangle, a unit square, a unit cube, or a unit hyper-cube.

25. (Original) The memory medium of claim 21, wherein the parameter space comprises a unit n-dimensional cube, wherein the dimensionality n is greater than 4.

26. (Original) The memory medium of claim 21, wherein the metric of the surface is a Riemannian metric.

27. (Original) The memory medium of claim 21, wherein the surface comprises a space with dimensionality greater than two.

28. (Original) The memory medium of claim 21,
wherein the surface comprises a surface of an object;
wherein the curve comprises a scan path useable to scan the object;
wherein the program instructions are further executable to perform:
scanning the object to determine one or more properties of the object.

29. (Original) The memory medium of claim 21,

wherein the surface comprises a six-dimensional space comprising three position degrees of freedom and three orientation degrees of freedom for an object;

wherein the generated curve comprises a scan path useable in scanning the six-dimensional space;

wherein the program instructions are further executable to perform:

scanning the six-dimensional space to determine an optimum position and orientation of the object.

30. (Currently Amended) A system for generating a curve on a surface, comprising:

a CPU; and

a memory medium which is operable to store one or more software programs;

wherein said CPU is operable to execute said one or more software programs to perform:

selecting a parameterization of the surface, wherein the parameterization corresponds to a parameter space;

selecting a first curve in the parameter space, wherein the first curve is a Low Discrepancy Curve in the parameter space;

determining a re-parameterization of the surface based on a metric of the surface; and

mapping the first curve in the parameter space onto the surface based on the re-parameterization, to generate the curve, wherein the generated curve is a Low Discrepancy Curve on the surface;

wherein the curve is useable in analyzing the surface.

31. (Original) The system of claim 30, wherein the CPU is further operable to execute said one or more software programs to perform:

generating output comprising the generated curve on the surface.

32. (Cancelled)

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33. (Original) The system of claim 30, wherein the parameter space comprises one of a 2D rectangle, a unit square, a unit cube, a unit hyper-cube, or a unit n-dimensional cube, wherein the dimensionality n is greater than 4.

34. (Original) The system of claim 30, wherein the metric of the surface is a Riemannian metric.

35. (Original) The system of claim 30, wherein the surface comprises a space with dimensionality greater than two.

36. (New) A method for generating a curve on a surface, comprising:

selecting a parameterization of the surface, wherein the surface comprises a space with dimensionality greater than two, and wherein the parameterization corresponds to a parameter space;

selecting a first curve in the parameter space;

determining a re-parameterization of the surface based on a metric of the surface; and

mapping the first curve in the parameter space onto the surface based on the re-parameterization, to generate the curve;

wherein the curve is useable in analyzing the surface.

37. (New) A method for generating a curve on a surface of an object, comprising:

selecting a parameterization of the surface, wherein the surface comprises a space with dimensionality greater than two, wherein the parameterization corresponds to a parameter space;

selecting a first curve in the parameter space;

determining a re-parameterization of the surface based on a metric of the surface; and

mapping the first curve in the parameter space onto the surface based on the re-parameterization, to generate the curve;

wherein the curve is useable in analyzing the object.

38. (New) A memory medium which is operable to store program instructions for generating a curve on a surface, wherein said program instructions are executable to perform:

storing a parameterization of the surface, wherein the surface comprises a space with dimensionality greater than two, wherein the parameterization corresponds to a parameter space;

storing a first curve in the parameter space;

determining a re-parameterization of the surface based on a metric of the surface; and

mapping the first curve in the parameter space onto the surface based on the re-parameterization, to generate the curve;

wherein the curve is useable in analyzing the surface.

39. (New) A system for generating a curve on a surface, comprising:

a CPU; and

a memory medium which is operable to store one or more software programs;

wherein said CPU is operable to execute said one or more software programs to perform:

selecting a parameterization of the surface, wherein the surface comprises a space with dimensionality greater than two, wherein the parameterization corresponds to a parameter space;

selecting a first curve in the parameter space;

determining a re-parameterization of the surface based on a metric of the surface; and

mapping the first curve in the parameter space onto the surface based on the re-parameterization, to generate the curve;

wherein the curve is useable in analyzing the surface.